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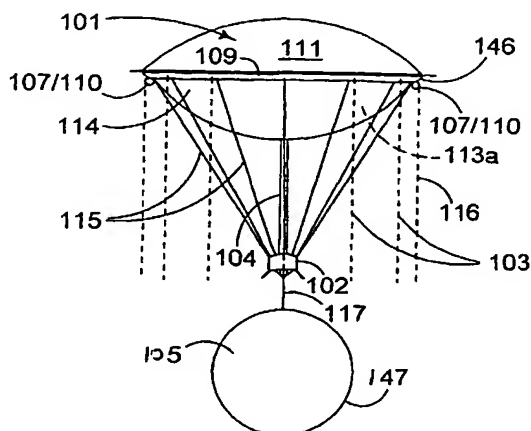
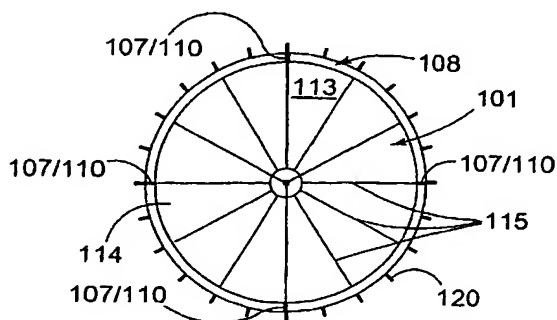
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[Continued on next page]

(54) Title: AIR VEHICLE



(57) Abstract: An aircraft comprising an envelope (6) that is inflatable with a lifting gas that is lighter than air that, at least when inflated has curved upper and lower surfaces. The aircraft has a payload carrying means (5), and an aerodynamic lifting means (8) for creating a vertical annular flow of air that induces a flow of air over the respective upper or lower surface (12, 14) of the envelope (6.). One form of aerodynamic generator (8) comprises a plurality of aerofoil blades (20) mounted for rotation around a periphery of the envelope (6).



GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
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INTERNATIONAL SEARCH REPORT

In national Application No
PCT/GB2004/000742

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B64B1/06 B64B1/58 B64B1/40

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B64B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 082 205 A (CAUFMAN ROBERT L) 21 January 1992 (1992-01-21) the whole document	1-3,5,6, 8 7
Y	-----	
X	EP 0 201 309 A (HYSTAR AEROSPACE DEV CORP) 12 November 1986 (1986-11-12) page 10, line 21 - page 12, line 7; figures	1,4
Y	-----	
Y	DE 100 35 844 A (BABKIN MYKHAILO YEVMENOVICH) 9 August 2001 (2001-08-09) column 2, lines 15-35; figures	7
A	-----	
A	WO 00/32469 A (FAZAKAS GABOR) 8 June 2000 (2000-06-08) page 3, line 19 - page 5, line 8; figures	1,4,17
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the International filing date

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"P" document published prior to the International filing date but later than the priority date claimed

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the International search

13 September 2004

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20.09.04

Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

Int. Patent Application No.
PCT/GB2004/000742

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 931 411 A (RISSER JAMES E ET AL) 3 August 1999 (1999-08-03) column 3, line 52 - column 4, line 11; figures	1-3,5-8
A	----- US 3 706 433 A (SONSTEGAARD MILES H) 19 December 1972 (1972-12-19) column 1, lines 41-54 column 2, lines 25-43; figures	18,23,31
A	----- US 2001/002686 A1 (IGLSEDER HEINRICH ET AL) 7 June 2001 (2001-06-07) the whole document	18,31
A	----- US 2 919 083 A (WINZEN OTTO C ET AL) 29 December 1959 (1959-12-29) the whole document	18,35
A	----- US 4 387 868 A (REGIPA ROBERT) 14 June 1983 (1983-06-14) column 5, line 49 - column 6, line 66; figures	35
A	----- US 2 977 069 A (HUCH WILLIAM F ET AL) 28 March 1961 (1961-03-28) -----	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2004/000742

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

As a result of the prior review under R. 40.2(e) PCT,
no additional fees are to be refunded.

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☒ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International Application No. PCT/ GB2004/ 000742

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-17

Air vehicle comprising an inflatable envelope creating static lift, the air vehicle further comprising aerodynamic lifting means which induce a vertical annular flow of air, thereby generating an airflow over the surface of the envelope for creating additional lifting forces.

2. claims: 18-36

A lighter-than-air vehicle comprising two air chambers separated by a membrane whereby the lifting gas of the upper chamber may pass through the membrane into the lower chamber for altitude-related gas expansion purposes.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No.
GB2004/000742

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